

6

Science Standard
6.6.b.



Energy and Material Resources: Renewable or Not?

California Education and the Environment Initiative

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The Education and the Environment Curriculum is a cooperative endeavor of the following entities:

California Environmental Protection Agency
California Natural Resources Agency
Office of the Secretary of Education
California State Board of Education
California Department of Education
California Integrated Waste Management Board

Key Leadership for the Education and Environment Initiative:

Linda Adams, Secretary, California Environmental Protection Agency
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Andrea Lewis, Assistant Secretary for Education and Quality Programs, California Environmental Protection Agency
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Key Partners:

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Office of Education and the Environment

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Lesson 1 What Are Resources?

None required for this lesson.

Lesson 2 What Do Humans Need?

None required for this lesson.

Lesson 3 What Makes a Resource Renewable?

Resources Discussion Questions: Group 1	2
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Lesson 4 How Do Our Practices Affect Our Resources?

None required for this lesson.

Lesson 5 How Do We Classify Our Resources?

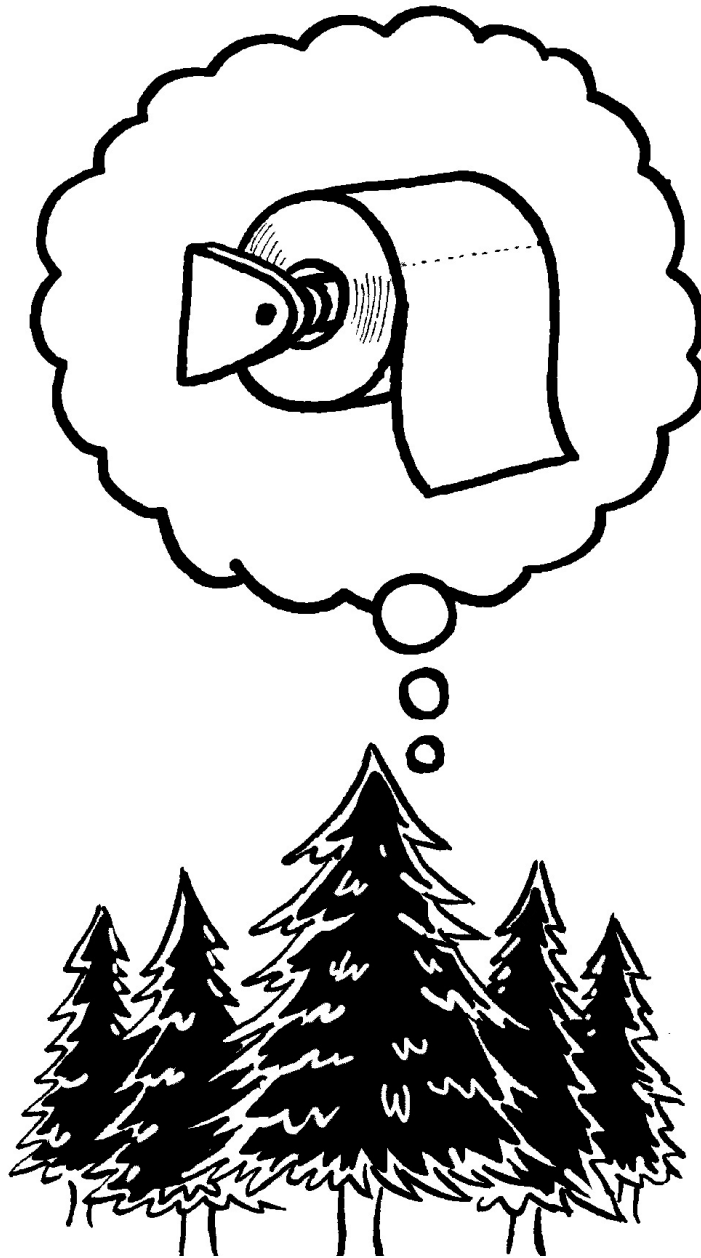
None required for this lesson.

Assessments

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Resources: Renewable, Nonrenewable, or Inexhaustible?—	
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Name: _____

Toilet Paper (Visual Aid #xx)



Instructions: Your group will lead a class discussion about this cartoon. You will ask the class the questions on the next page and choose classmates to answer them. As a group, read the questions and discuss the answers you will be listening for. Also, write one additional question and answer that you think will add to the discussion. Decide which student in your group will ask which questions.

Name: _____

Project **Toilet Paper** (Visual Aid #xx), read the caption and then ask:

- What is the wood going to be used for?

- If you asked at home (*last night's homework*), about how many rolls of toilet paper does your household use a month?

- If trees could talk, what do you think they would say about using them for toilet paper?

- What can we do to be careful about our use of trees for toilet paper?

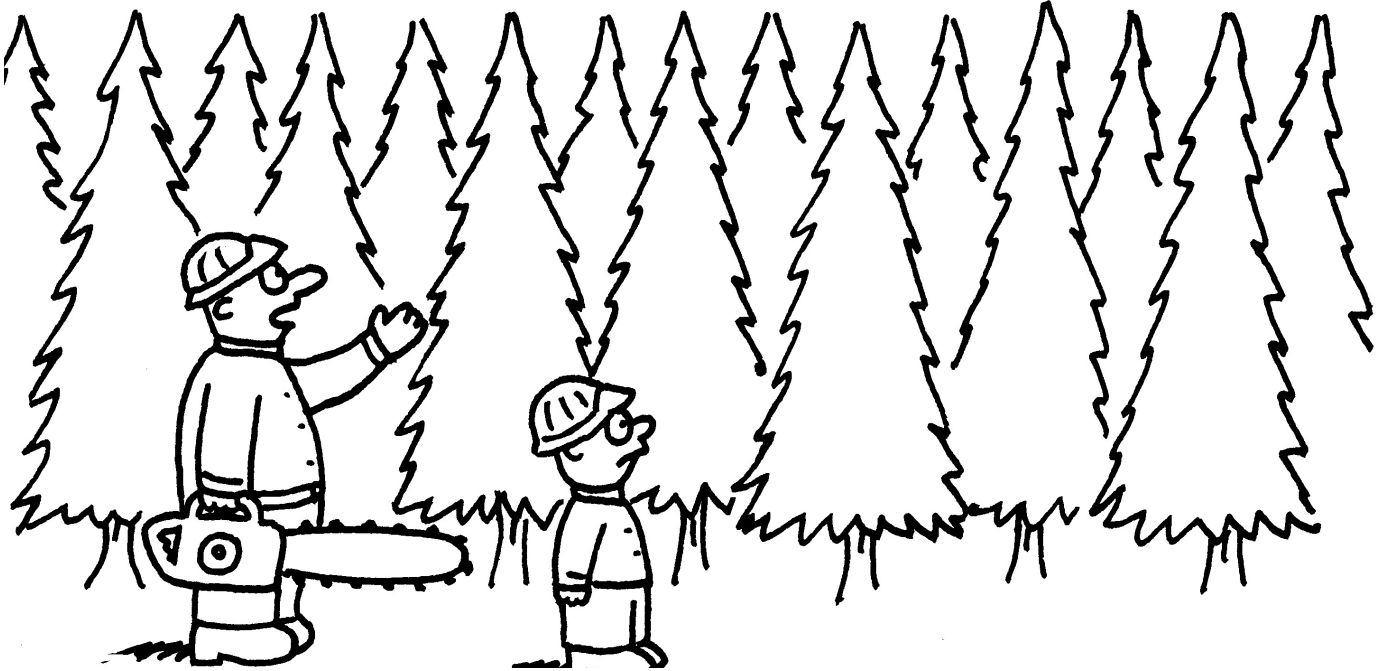
- What type of resource is wood: renewable, nonrenewable, or inexhaustible?

- Can the way we use it make it nonrenewable?

Your question and answer:

Name: _____

Junk Mail (Visual Aid #xx)



“One day son, all of this junk will be mail!”

Instructions: Your group will lead a class discussion about this cartoon. You will ask the class the questions on the next page and choose classmates to answer them. As a group, read the questions and discuss the answers you will be listening for. Also, write one additional question and answer that you think will add to the discussion. Decide which student in your group will ask which questions.

Name: _____

Project **Junk Mail** (Visual Aid #xx), read the caption and then ask:

- What is the wood going to be used for?

- If you asked at home (*last night's homework*), show with your hands how tall a stack of junk mail your house receives each month.

- If trees could talk, what would they say to us about our use of trees for junk mail?

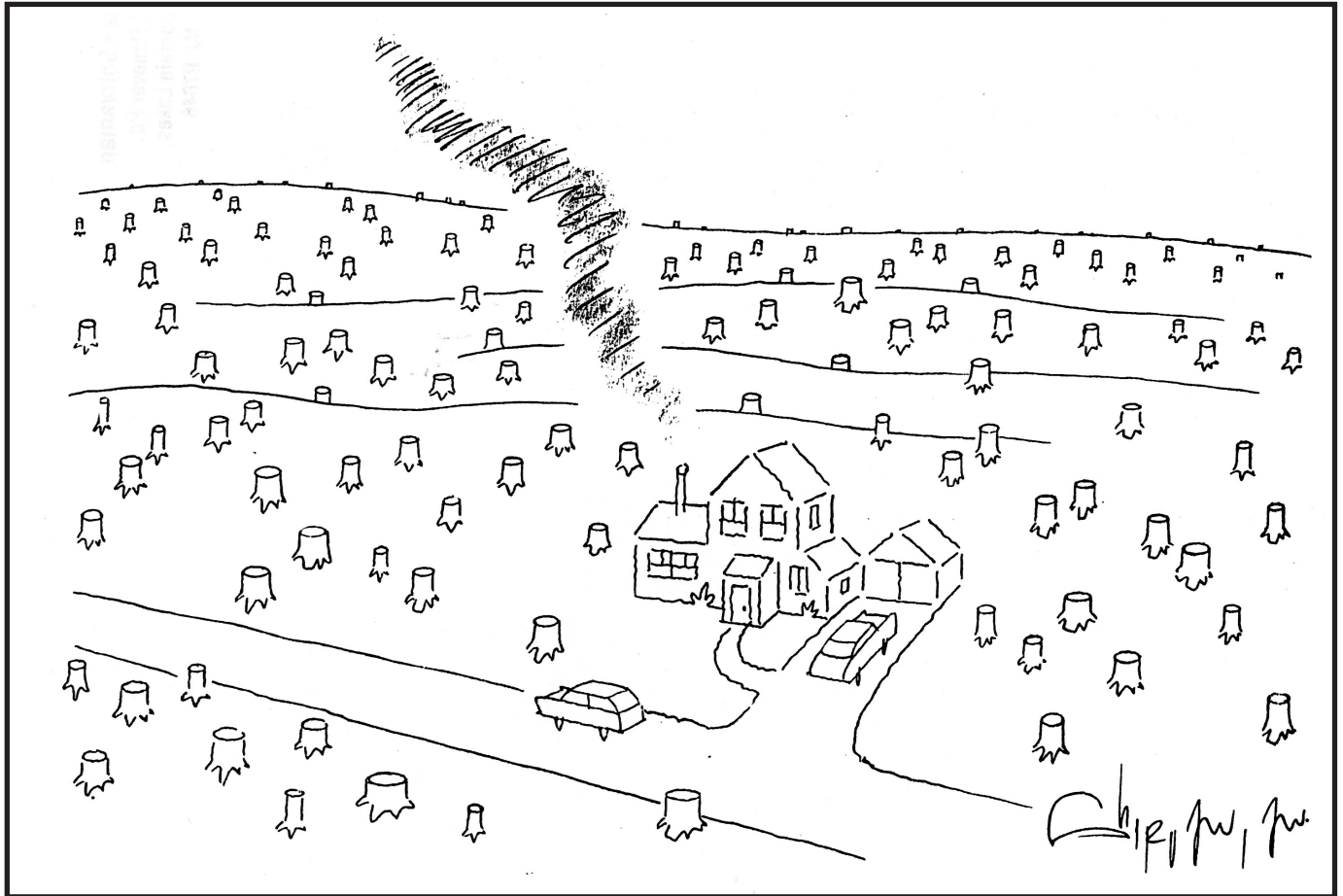
- What can we do to be careful users of trees and junk mail?

- How can the amount of junk mail we generate affect whether trees are a renewable, nonrenewable or inexhaustible resource?

Your question and answer:

Name: _____

Wood-burning Stove (Visual Aid #x)



“Can you believe it? Since we installed our wood-burning stove,
we’ve spent next to nothing on heating oil”

Instructions: Your group will lead a class discussion about this cartoon. You will ask the class the questions on the next page and choose classmates to answer them. As a group, read the questions and discuss the answers you will be listening for. Also, write one additional question and answer that you think will add to the discussion. Decide which student in your group will ask which questions.

Name: _____

Project **Wood-burning Stove** (Visual Aid #x), read the caption and then ask:

- What is the wood going to be used for?

- Why are the people in the house happy that they are not using heating oil?

- In what way does this cartoon suggest that using wood for heating might be a problem?

- What does this cartoon suggest about how much or how quickly people can use wood?

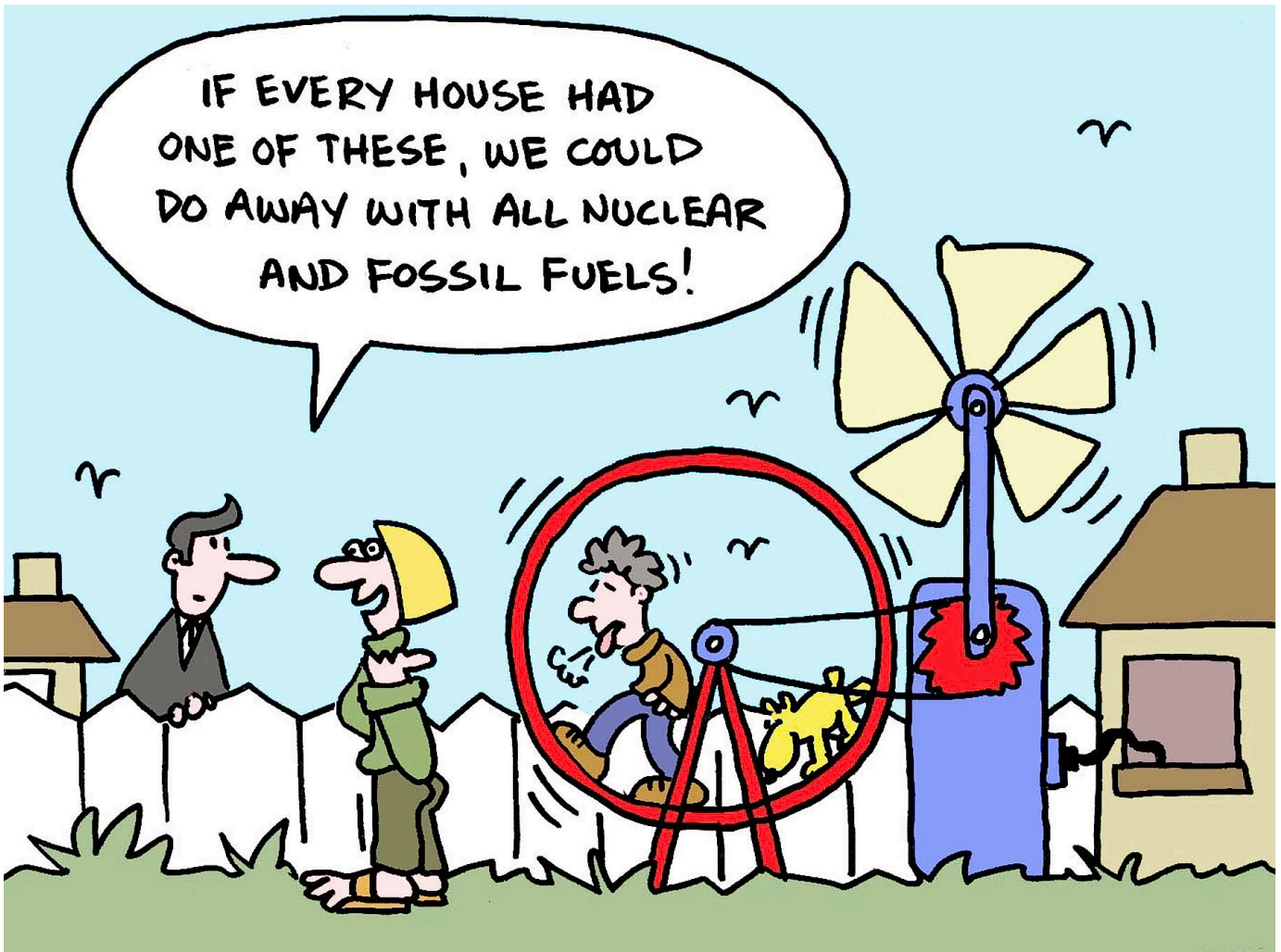
- What does this cartoon suggest about making choices to use less of one type of resource by replacing it with another resource?

- Is heating oil a renewable, nonrenewable, or inexhaustible energy resource?

Your question and answer:

Name: _____

Boy- and Dog-Powered Fan (Visual Aid #x)



Instructions: Your group will lead a class discussion about this cartoon. You will ask the class the questions on the next page and choose classmates to answer them. As a group, read the questions and discuss the answers you will be listening for. Also, write one additional question and answer that you think will add to the discussion. Decide which student in your group will ask which questions.

Name: _____

Project **Boy- and Dog-Powered Fan** (Visual Aid #x), read the caption and then ask:

- What are the boy and dog doing?

- Do you think the house will continue getting electricity if they stop moving?

- How is this a problem for generating electricity without using nuclear and fossil fuels?

- Why are people concerned about using nuclear and fossil fuels?

- Do you think having one of these in every home would make a difference in how much energy was used from fossil fuels?

Your question and answer:

Name: _____

Fossil Fuels (Visual Aid #x)



"WE CAME HERE BECAUSE OUR PLANET
RAN OUT OF FOSSIL FUEL."

Instructions: Your group will lead a class discussion about this cartoon. You will ask the class the questions on the next page and choose classmates to answer them. As a group, read the questions and discuss the answers you will be listening for. Also, write one additional question and answer that you think will add to the discussion. Decide which student in your group will ask which questions.

Name: _____

Project **Fossil Fuels** (Visual Aid #x), read the caption and then ask:

- Where do fossil fuels come from?

- What are some examples of fossil fuels?

- What do people use fossil fuels for?

- Why do you think the aliens ran out of fossil fuels?

- Could people on Earth run out of fossil fuels?

- What can people do to prevent running out of fossil fuels?

Your question and answer:

Name: _____

Sunshine Going to Waste (Visual Aid #x)



“When I think of all sunshine going to waste...”

Instructions: Your group will lead a class discussion about this cartoon. You will ask the class the questions on the next page and choose classmates to answer them. As a group, read the questions and discuss the answers you will be listening for. Also, write one additional question and answer that you think will add to the discussion. Decide which student in your group will ask which questions.

Name: _____

Project **Sunshine Going to Waste** (Visual Aid #x), read the caption and then ask:

- Is the world likely to run out of sunshine?

- How can people use the energy of sunlight to get energy for their homes?

- How else can we use the Sun's energy?

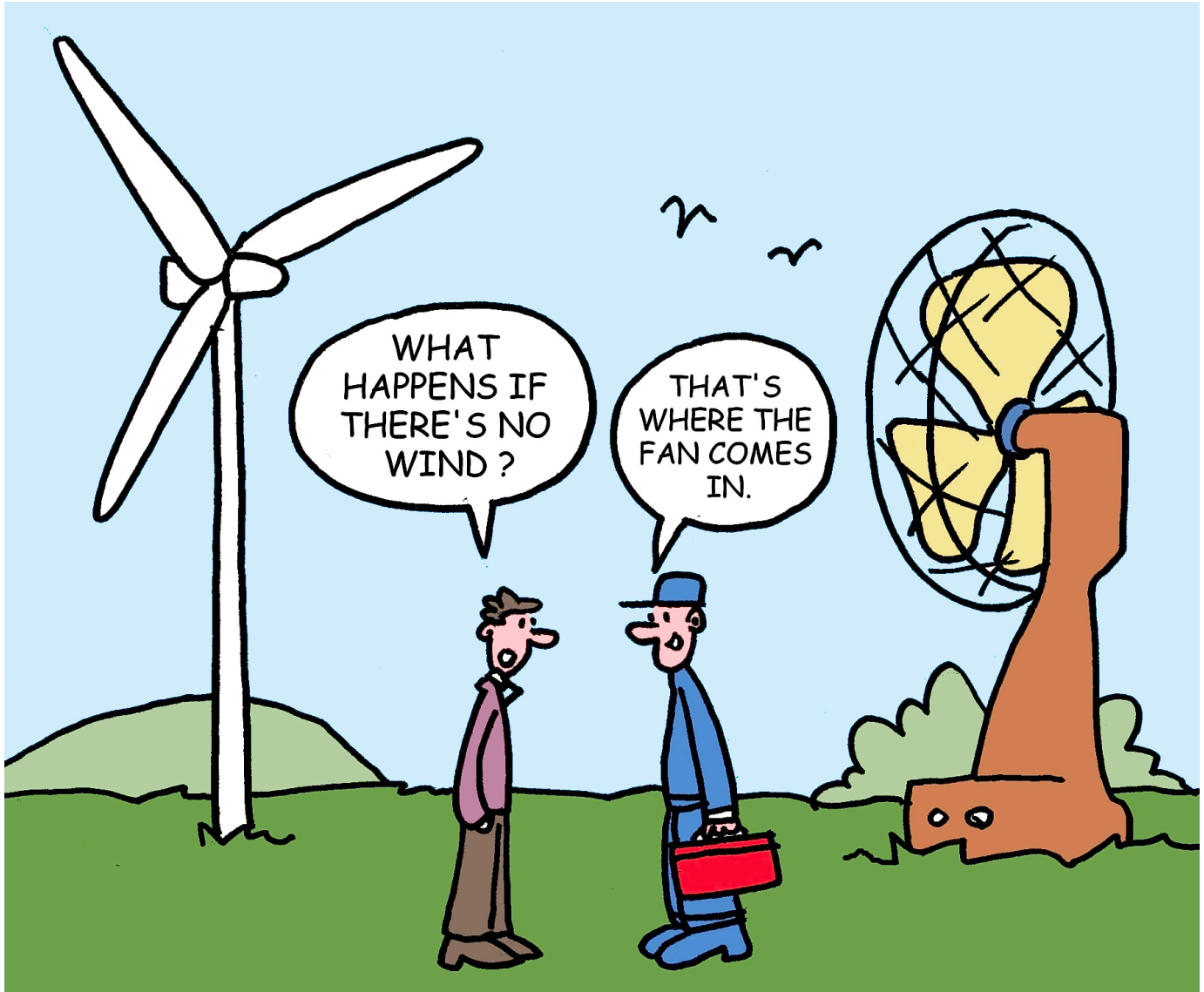
- Why don't people use solar power for all our energy needs?

- Is the Sun a renewable, nonrenewable, or inexhaustible resource?

Your question and answer:

Name: _____

Fans (Visual Aid #xx)



Instructions: Your group will lead a class discussion about this cartoon. You will ask the class the questions on the next page and choose classmates to answer them. As a group, read the questions and discuss the answers you will be listening for. Also, write one additional question and answer that you think will add to the discussion. Decide which student in your group will ask which questions.

Name: _____

Project **Fans** (Visual Aid #xx). Point to the turbine and explain that turbines, such as these, use wind energy to generate electricity. Read the caption and then ask:

- Which one, the turbine or the fan, gets its power from the wind?

- Which one, the turbine or the fan, gets its power from electricity that may be produced from some other energy source?

- What might be the other possible source of energy?

- Which one, the turbine or the fan, is taking advantage of an inexhaustible resource?

- What are some advantages of using wind turbines?

- What are some disadvantages of using wind turbines?

Your question and answer:

Name: _____

Instructions: Read the sentences and provide answers in the spaces provided.
(1 point each, 5 points total)

1. List five energy resources.

2. List five material resources.

Instructions: Select the best answer and circle the best answers. (1 point each, 5 points total)

3. Which five resources are essential for human survival?

roads	plants	stores	energy for cooking and heating
lights	vehicles (cars and trucks)	water	computers
air	cell phones	animals	

Instructions: Read the sentences and provide answers in the spaces provided.

4. What are renewable resources? (3 points) Provide two examples. (2 points)

5. What are nonrenewable resources? (3 points) Provide two examples. (2 points)

Name: _____

6. What are inexhaustible resources? (3 points) Provide two examples. (2 points)

Instructions: Complete the task below.

7. Draw lines to match each resource to its correct category or categories. (10 points, 1 point each)

Iron

Petroleum

Renewable Resources

Wind

Fish

Rocks

Nonrenewable Resources

Sun

Trees

Salt water

Inexhaustible Resources

Fresh water

Gold

Name: _____

Instructions: Read the following question and provide the answer in the space provided. (5 points)

8. If you drew more than one line from a resource in Question 7, explain how the resource might belong to multiple categories.

Resources: Renewable, Nonrenewable, or Inexhaustible?

Alternative Unit Assessment Master

Name: _____

Instructions: Create a poster called “Resources: Renewable, Nonrenewable or Inexhaustible?” Divide the poster into three parts, and follow the instructions below for each part.

Part 1: Energy and Material Resources (10 points)

- Draw a picture of an energy resource and explain why it is important to human life.
- Draw a picture of a material resource and explain why it is important to human life.

Part 2: Renewable, Nonrenewable, or Inexhaustible? (10 points)

- Define the following terms: “renewable resource,” “nonrenewable resource,” and “inexhaustible resource.”
- Draw and label one example for each term.

Part 3: Resource Classification Can Change (10 points)

- Describe a natural resource that might change classifications because of human practices.

Put your name on the poster.

Due date: _____



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